

Notice of Allowability

Application No.

09/912,460

Examiner

Gregg Cantelmo

Applicant(s)

KAWAHARA, TATSUYA

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Entered After Final Amendment received 1/7/04.
2. ☒ The allowed claim(s) is/are 1-3,6-9,11 and 12.
3. ☒ The drawings filed on 26 January 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____ |
| 3 <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No. _____ | 7 <input type="checkbox"/> Examiner's Amendment/Comment |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other |

Gregg Cantelmo
Patent Examiner
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DETAILED ACTION

Allowable Subject Matter

1. Claims 1-3, 6-9 and 11-12 are allowed.
2. The following is an examiner's statement of reasons for allowance: see item 7 of the previous office action, incorporated herein.

With respect to claim 1, none of the prior art of record appear to teach, fairly suggest or render obvious the polymer electrolyte fuel cell as recited in claim 1 having a high-temperature portion and low-temperature portion with oxidant directed from the high-temperature portion to the low-temperature portion so that water produced during fuel cell operation is recirculated in the oxidant passage, wherein the oxidant passage has an upstream portion provided with a hydrophilicity-treated portion and a downstream portion provided with a hydrophobicity-treated portion.

The hydrophilic and hydrophobic treated portions are shown to have an added effect on the water recirculation in the oxidant passage and further on the self-humidification of the fuel cell (page 9, ll. 1-19 and page 11, ll. 16-21).

With respect to claim 11, none of the prior art of record appear to teach, fairly suggest or render obvious the polymer electrolyte fuel cell as recited in claim 11 having a high-temperature portion and low-temperature portion with oxidant directed from the high-temperature portion to the low-temperature portion so that water produced during fuel cell operation is recirculated in the oxidant passage and wherein the oxidant passage has a downstream portion provided with a hydrophobicity-treated portion and

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further comprising a water drop atomizing device disposed at a location upstream of an inlet of the oxidant gas passage.

Again the hydrophobicity-treated portion is shown to have an added effect on the water circulation in the oxidant passage and further on the self-humidification of the fuel cell.

The combination of the hydrophobicity-treated portion and the water drop atomizing device recirculates the water produced by the fuel cell in the oxidant passage and improves the self-humidification of the fuel cell system (see page 13, ll. 3-12).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (571) 272-1283. The examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 5:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached at (571) 272-1292. FAX communications should be sent to FAX number: (703) 872-9306. FAXES received after 4 p.m. will not be processed until the following business day. Any inquiry of a general

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nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.

Gregg Cantelmo
Patent Examiner
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January 20, 2004